Visualization of Complex Data

Nathalie Henry Riche

Microsoft Research

who

Nathalie Henry Riche

since 2009 Researcher at Microsoft Research, USA

2005-2009 Ph.D. from INRIA, France & University of Sydney, Australia

2013 Aïdan

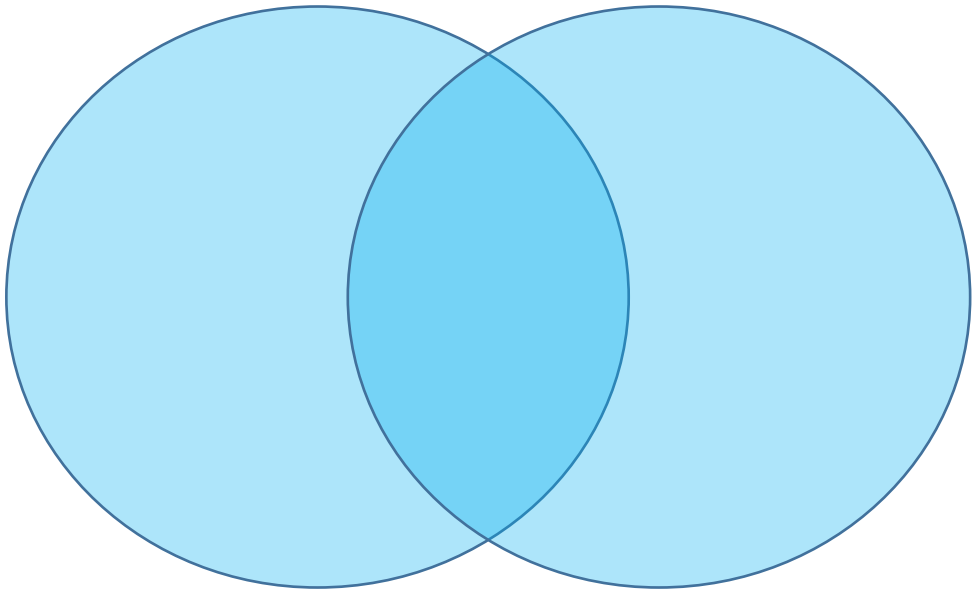
2011 Emma

what

visualizing complex data

to understand complex systems – *data scientists*

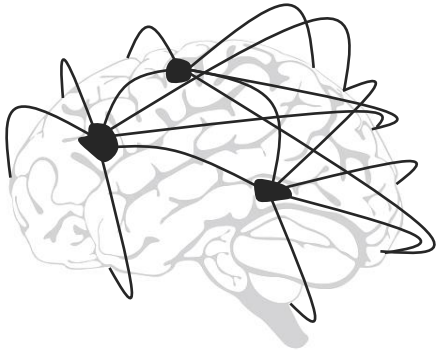
to make decisions – *data enthusiasts*



complex data

big data

data scientists



identify patterns in functional brain connectivity networks
to detect degenerative diseases like Alzheimer's disease earlier

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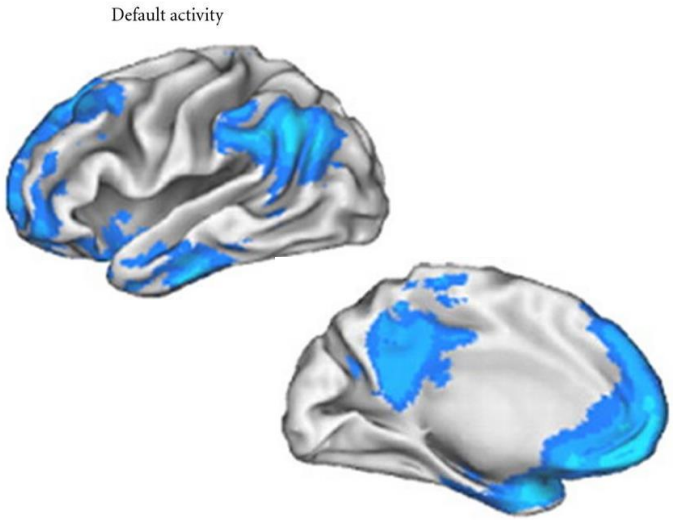
Inria informatics mathematics

University of Washington 1861

complex (small) data

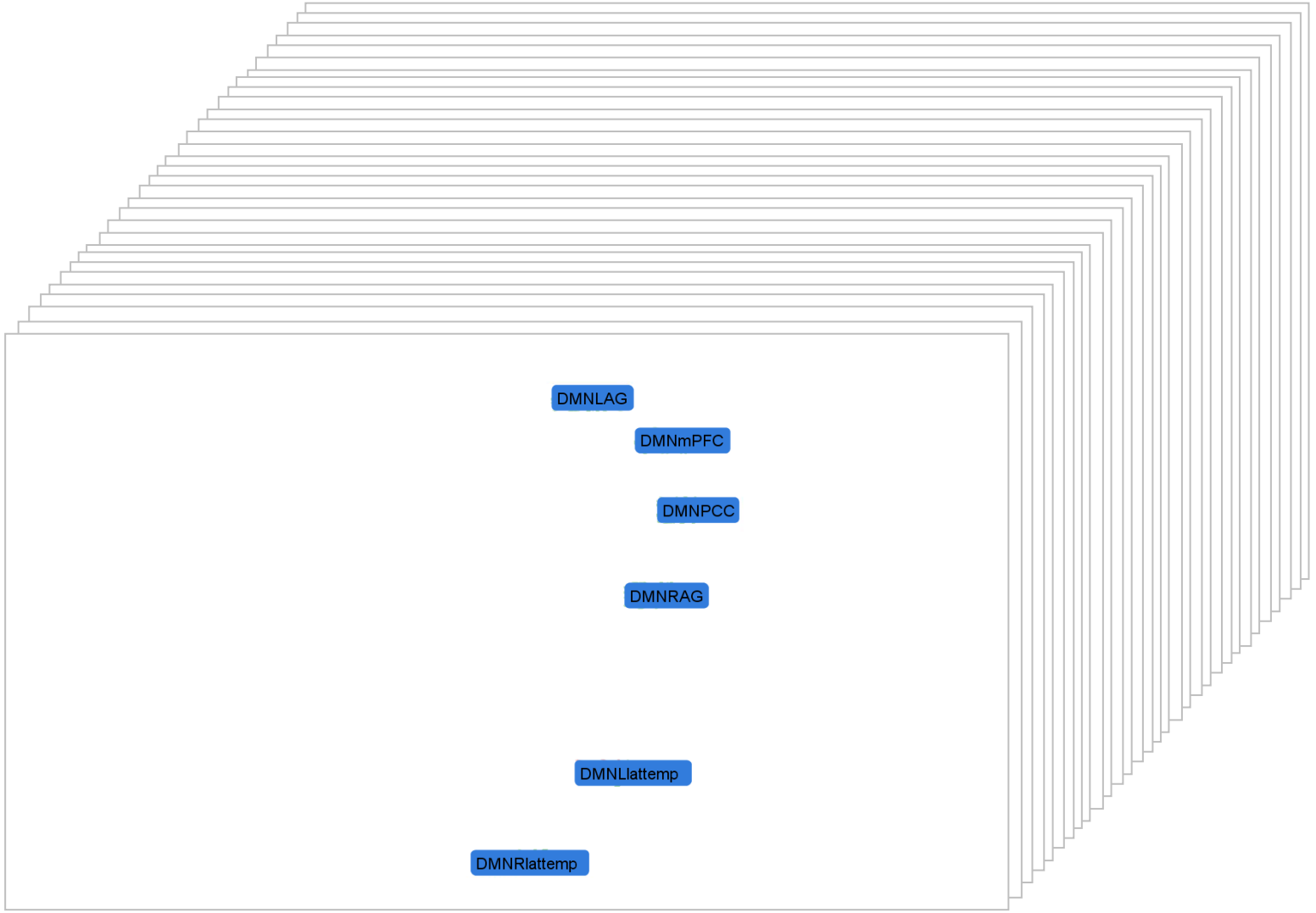


23 brain regions

4 functional groups

[-1,1] correlations

300 time points

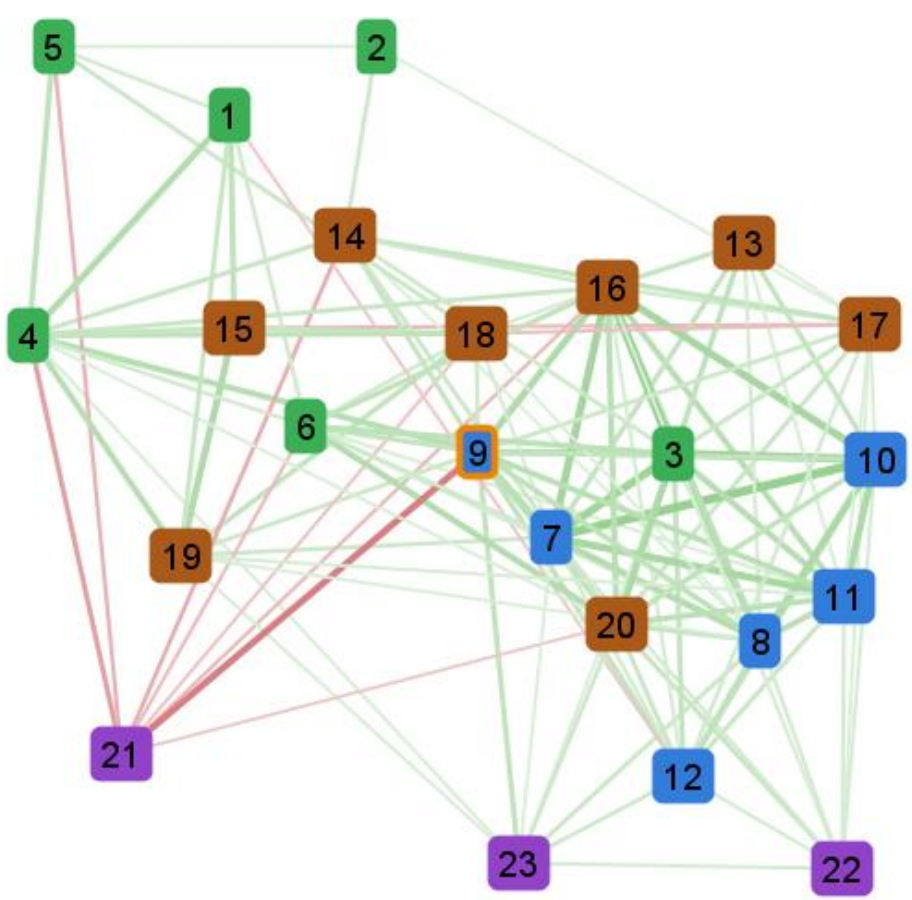


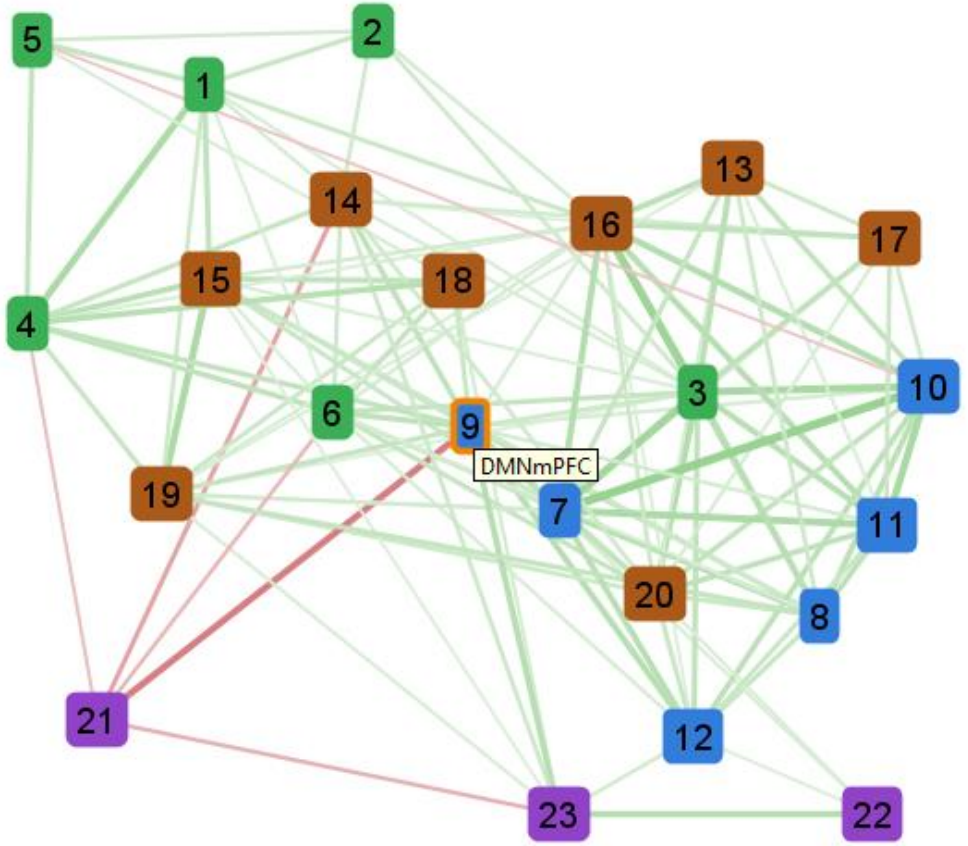
challenges

1. identify patterns in complex data

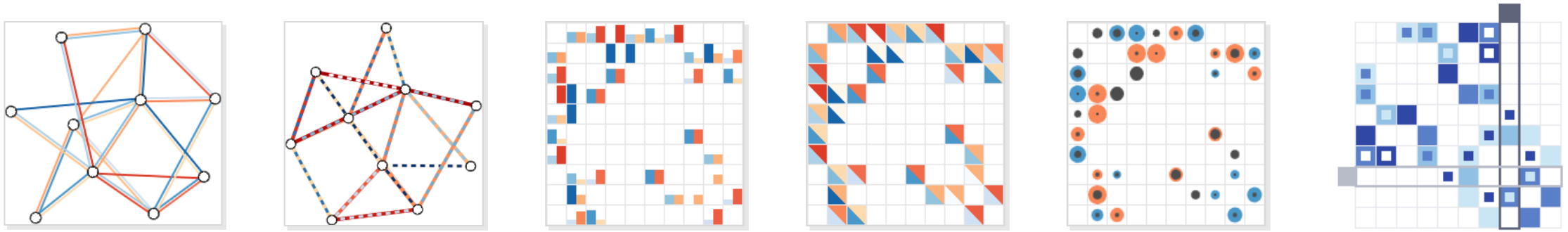
identify patterns in multiple dynamic multivariate weighted networks

comparing two weighted networks



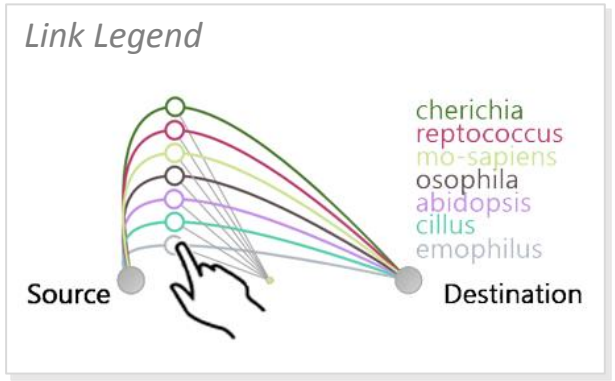


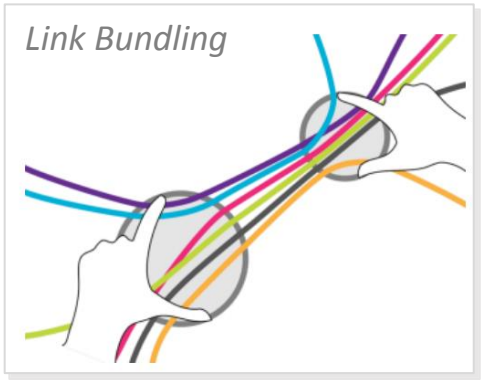
designing novel visual encodings

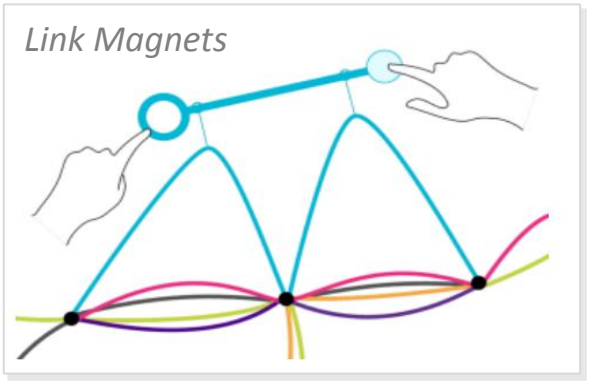


B. Alper, B. Bach, N. Henry Riche, T. Isenberg, and J-D. Fekete, **Weighted Graph Comparison Techniques for Brain Connectivity Analysis**, *ACM SIGCHI 2013*, Best Paper Award.

designing novel interaction techniques

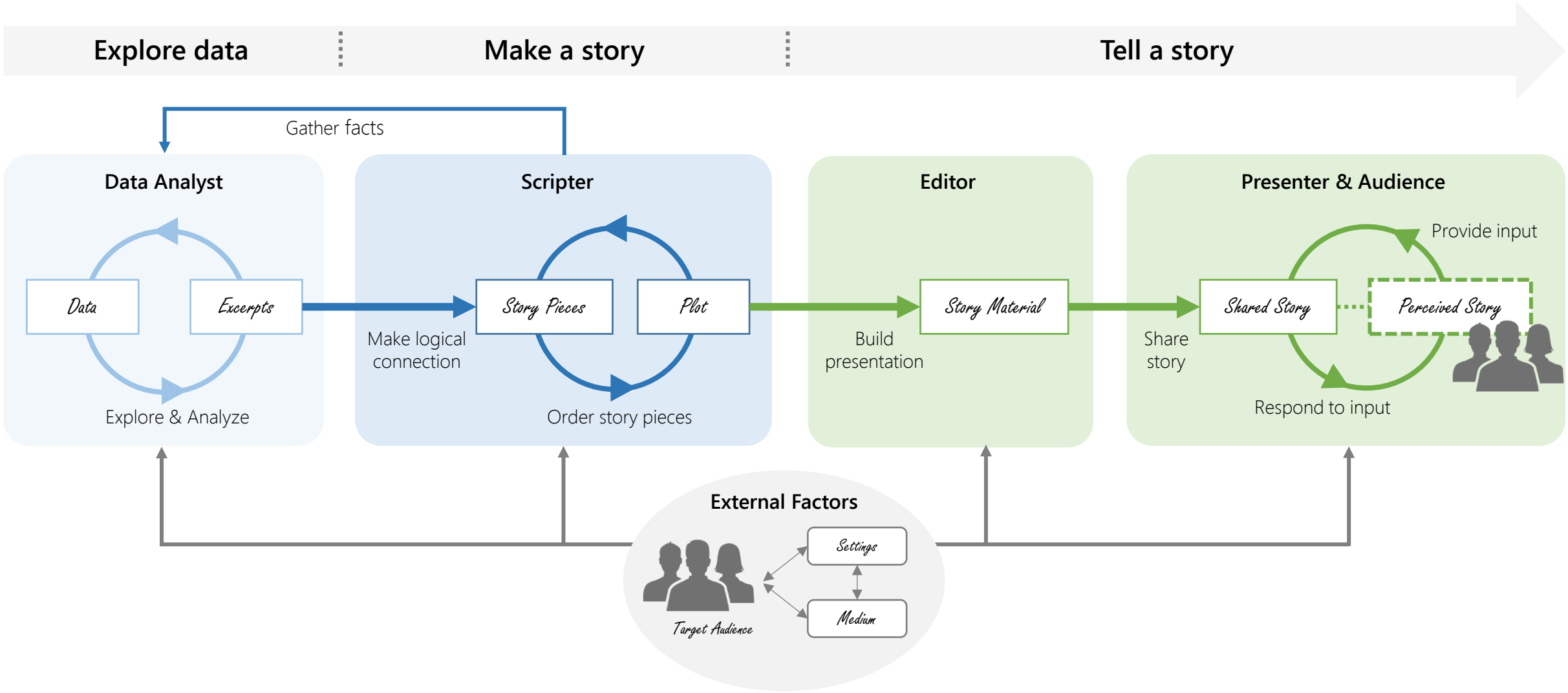




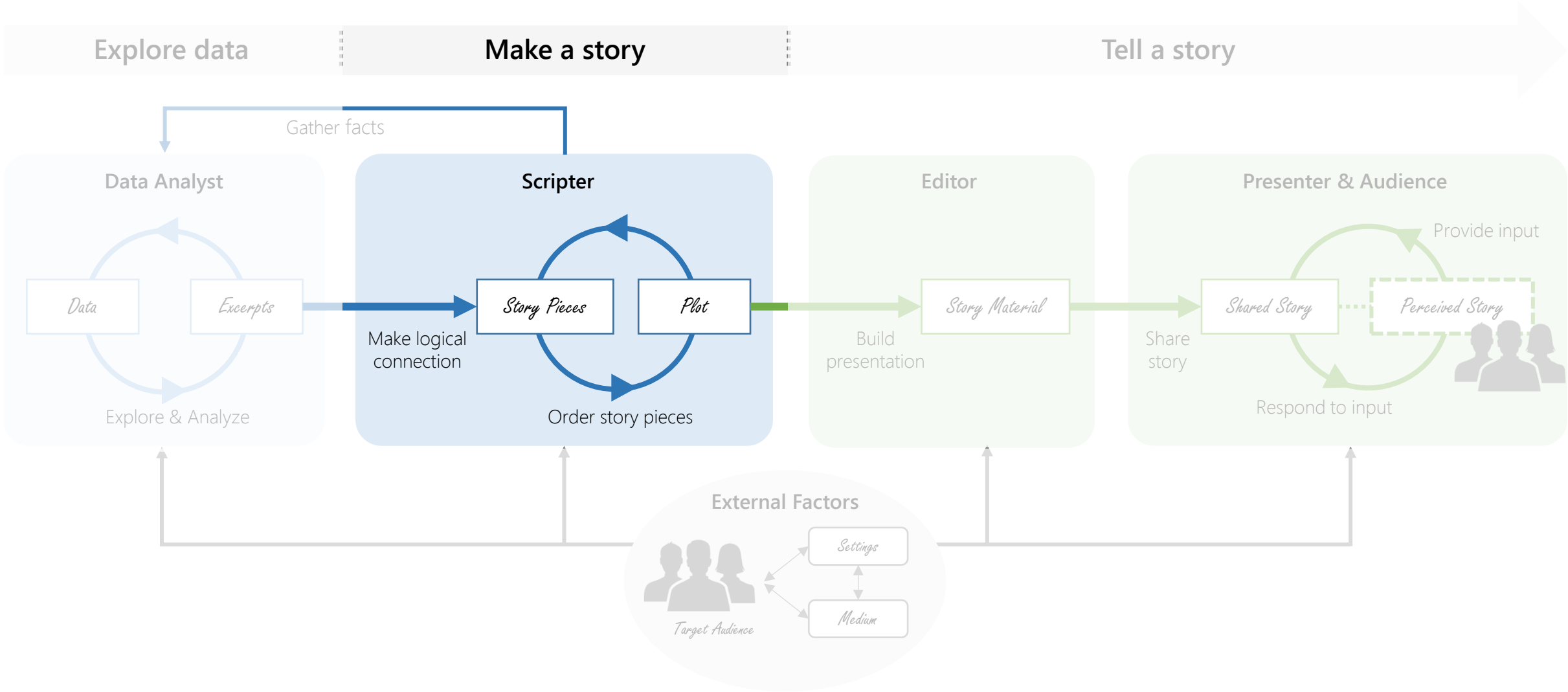


N. Henry Riche, T. Dwyer, B. Lee, and S. Carpendale, **Exploring the Design Space of Interactive Link Curvature in Network Diagrams,** *ACM AVI 2012*

2. make sense of insights to form a compelling story


Explore data
Make a story
Tell a story
Gather facts
Data Analyst
Data
Excerpts
Explore & Analyze
Scripter
Make logical connection
Story Pieces
Plot
Order story pieces
Editor
Build presentation
Story Material
Presenter & Audience
Share story
Shared Story
Perceived Story
Provide input
Respond to input
External Factors
Target Audience
Settings
Medium

in progress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in progress

wish list

1. collaboration effort
2. development effort
3. communication effort